Russian Journal of General Chemistry 2001 vol.71 N3, pages 354-358

Addition of dialkyl hydrogen phosphites to alkenes in the presence of carbonyl complexes of chromium subgroup metals and iron

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Abstract

Depending on the reactant ratio and order of their mixing, reactions of dialkyl hydrogen phosphite with alkenes in the presence of catalytic amounts of homoligand carbonyl complexes of iron or chromium subgroup metals yield phosphonates by two pathways: reaction of dialkyl hydrogen phosphite with π-coordinated alkene and addition to alkene of the product of reaction of dialkyl hydrogen phosphite with the transition metal carbonyl. The products of reactions of Fe(CO)5 and W(CO)6 with dialkyl hydrogen phosphites contain the phosphorus-metal bond.

http://dx.doi.org/10.1023/A:1012352900754